TRAINMASTER
AND
ROAD FOREMAN OF ENGINES

R. M. ROBERTS

CHIEF TRAIN DISPATCHER

S. H. CROUSE
Mexicali

SAN DIEGO & ARIZONA EASTERN RAILWAY COMPANY

TIJUANA AND TECATE RAILWAY COMPANY

TIMETABLE

87

EFFECTIVE SUNDAY, SEPTEMBER 26, 1954

AT 12:01 A.M.

PACIFIC STANDARD TIME

FOR THE GOVERNMENT AND INFORMATION
OF EMPLOYES ONLY

P. D. ROBINSON
Vice President and General Manager

C. M. EICHENLAUB
Superintendent

Timetable No. 87
September 26, 1954

EASTWARD — SECOND CLASS

Capacity of sidings		452 Freight Leave Daily	Mile Post or Kilometer Post	STATIONS		Distance from El Centro
San Diego yard: No. 1-45 BKDYP		AM 7.30	1.1	TO-R SAN DIEGO	S. D. & A. E. Ry.	147.0
				2.2 Naval Repair Base Crossing		144.8
PI			3.3			
P		7.45	4.8	1.5 TWELFTH ST. Natl. City		143.3
P		7.52	7.4	2.6 CHULA VISTA JCT.		140.7
P		7.58	9.1	1.7 BOAL		139.0
P		8.02	11.1	2.0 PALM CITY		137.0
Yd. Limits KP		8.12	15.5	TO-R 4.4 SAN YSIDRO		132.6
P		s 8.30	K 0.1	R 0.7 TIJUANA	T. & T. Ry.	131.9
P		8.37	K 4.1	2.3 AGUA CALIENTE		129.6
WP		f 9.26	K 33.9	18.1 REDONDO		111.5
Yard Limits WP		s 10.30	K 59.9	TO-R 16.2 TECATE		95.3
P		10.51	60.3	7.5 DIVISION		87.8
P		11.15	65.8	TO 5.5 CAMPO		82.3
28 WP		AM 11.40	71.9	6.1 CLOVER FLAT		76.2
38 YP		PM 12.15	84.5	12.6 HIPASS		63.6
WP		12.40	92.9	TO 8.4 JACUMBA		55.2
31 P		12.43	94.0	1.1 TITUS	S. D. & A. E. Ry.	54.1
			96.0	2.0 DUBBERS		52.1
P		1.10	100.7	4.7 CARRISO GORGE		47.4
P		1.17	102.3	1.6 TUNNEL 15 SPUR		45.8
50 WP		1.44	109.7	7.4 DOS CABEZAS		38.4
39 WP		2.23	122.5	12.8 COYOTE WELLS		25.6
Yard Limits P		2.40	130.0	TO 7.5 PLASTER CITY		18.1
Yard Limits P		3.00	139.8	9.8 SEELEY		8.3
		3.12	145.1	5.3 WILSIE		3.0
Yard Limits BKWYP		3.30 PM	148.1	TO-R 3.0 EL CENTRO		0.0
		Arrive Daily		(147.0)		
		452				

WESTWARD — SECOND CLASS

451 Freight Arrive Daily	
PM 3.00	
2.45	
2.36	
2.31	
2.26	
2.16	
s 2.06	
2.00	
f 1.20	
s 12.40	
12.18 PM	
11.59 AM	
11.40	
11.04	
10.38	
10.35	
10.08	
10.01	
9.33	
8.53	
8.37	
8.17	
8.06	
8.00 AM	
Leave Daily	
451	

Nos. 451 and 452 use SP main track between junction switch and SP station, El Centro, moving with caution.

Nos. 451 and 452 will operate as Mixed trains between Tijuana and KP 70.9, and handle passengers between those points only.

Nos. 451 and 452 will stop on flag at Garcia, Matanuca and KP 70.9.

EAST-WARD ↓ | WEST-WARD

Timetable No. 87

September 26, 1954

CHULA VISTA BRANCH

Capacity of sidings	Mile Post Location	STATIONS	Distance from K St. Chula Vista
San Diego yard P	4.8	TWELFTH ST. Natl. City	4.8
		0.9	
	5.7	24th ST. Natl. City	3.9
		1.7	
	7.4	F STREET JCT.	2.2
		0.2	
P	7.6	CHULA VISTA JCT.	2.0
		0.9	
	8.5	TO CHULA VISTA	1.1
		1.1	
	9.6	K St. Chula Vista	0.0

(4.8)

EAST-WARD ↓ | WEST-WARD

Timetable No. 87

September 26, 1954

CORONADO BRANCH

Capacity of sidings	Mile Post Location	STATIONS	Distance from North Island
	7.4	F STREET JCT.	13.9
		2.5	
	9.9	SALT WORKS	11.4
		2.4	
	12.2	FORT EMORY	9.0
		6.0	
	18.3	TENT CITY	3.0
		1.1	
	19.4	CORONADO	1.9
		1.9	
Yard Limits	21.3	NORTH ISLAND	0.0

(13.9)

Note: Navy tracks used beyond MP 21.3.

ADDITIONAL STATIONS
San Diego-El Centro Line

NAME		Mile Post	Capacity
Linen	(Spur)	9.5	16
Otay	(Spur)	10.1	48
Standard	(Spur)	K 5.9	4
Garcia	(Spur)	K 13.6	23
Matanuca	(Spur)	K 19.2	15
Barrett	(Spur)	67.1	7
Clover Flat Pit	(Spur)	74.4	17
Edgar	(Spur)	137.1	6

EAST-WARD ↓ | WEST-WARD

Timetable No. 87

September 26, 1954

LA MESA BRANCH

Capacity of sidings	Mile Post Location	STATIONS	Distance from El Cajon
San Diego yard BKDYP	1.1	TO-R SAN DIEGO	15.7
		9.3	
	10.4	LEMON GROVE	6.4
		1.9	
	12.3	LA MESA	4.5
		3.0	
	15.3	GROSSMONT	1.5
		1.5	
	16.8	EL CAJON	0.0

(15.7)

RULE A. The following rules have been revised. Revised pages have been printed covering these changes, and employes must have revised pages in their copy of Book of Rules.

Page Number	Rule Revised
17	7-A
19	10-G
53	104-C
104	306
108	536
126	822
127	825
130	831
131	832 (cancelled)

RULE M. Employes are warned that it is dangerous to ride on top or side of cars while passing points where impaired clearance exists, and that they must protect themselves from injury. See list of impaired clearances on main track and siding.

There are numerous other structures with impaired clearance on yard and station tracks on the division, and employes must be familiar with their location and avoid personal injury.

RULE 10-G. First paragraph is revised to read:

"When an unattended red flag or red light is displayed to the right of track in direction of approach, train, after stopping, must be preceded for a distance of one-half mile from point where signal is displayed, by a flagman who must carefully examine track and structures."

RULE 10-H. First sentence of first paragraph is revised to read:

"When a yellow signal is required it will be displayed to the right of track in direction of approach one-fourth mile from structure or track over which speed of trains must be restricted."

RULE 10-J. Second paragraph is revised to read:

"Speed signs that prescribe reduction in speed will be located one-fourth mile from initial point of restriction, and where used to authorize an increase in speed will be located at the point where higher permissible speed commences, and speed may be increased accordingly as soon as rear of train has passed the speed sign. Where such signs are not used to authorize an increase in speed, limit of restriction will be shown in timetable." (Speed signs prescribing an increase in speed will not be installed on SD&AERy.)

RULE 14. Following paragraph is added:

"Signs bearing the letter 'X', located one-fourth mile in advance of certain public crossings at grade, and signs bearing the letter 'W', located one-fourth mile in advance of certain tunnels and obscure curves, require engine whistle signal as prescribed by Rule 14(1). Absence of these signs, in advance of public crossings at grade, tunnels or obscure curves, does not relieve engineers from complying with Rule 14(1)."

RULE 15. First paragraph is revised to read:

"The explosion of two torpedoes is a signal to proceed with caution for not less than one-half mile. The explosion of one torpedo will indicate the same as two, but the use of two is required."

RULE 19. Certain passenger cars have supplemental roof-line markers in addition to side electric markers. When such cars are on rear of train, the supplemental markers must be lighted by day as well as by night and duplicate the display to the rear of side electric markers.

RULE 30. Engine bell must be rung continuously between the following points:

San Diego and Kilometer 7; Kilometer 14.0 and east end of Tunnel 2; Tecate and Campo; MP 96 and MP 106; San Diego and Mount Hope Cemetery.

RULE 35. First paragraph is revised to read:

"The following signals must be used by flagmen:

Day signals: A red flag, torpedoes and fusees.
Night signals: A white light, torpedoes and fusees."

RULE S-72. Westward regular trains are superior to trains of the same class in the opposite direction.

RULE 93. Yard limits in which the provisions of Rule 93 will apply are established at the following stations:

West MP		East MP
	San Diego	4.8
	" (Chula Vista Branch)	7.4
	" (La Mesa Branch)	4.7
14.5	San Ysidro-Agua Caliente	K5.1
K58.9	Tecate	K62.2
128.5	Plaster City	131.9
138.5	Seeley	141.1
147.2	El Centro	
21.3	North Island (Coronado Branch)	

RULE 98. RAILROAD CROSSINGS NOT INTERLOCKED: At following grade crossings trains will stop not less than 50 feet nor farther than 500 feet from crossing and will proceed only on signal from flagman:

Crossing at Chula Vista. Exception—San Diego-El Centro line trains will expect to find the main track blocked and will pass over the crossing not to exceed 15 MPH.

RULE 99-A. The following paragraph has been added:

"When protection is to be afforded for other than a train or engine and where conditions may interfere with the safe passage of trains or engines at normal speed, flagman must provide protection in accordance with second paragraph of Rule 99."

RULE 102-A. Is revised to read:

"When part of a train is left on main track by night, or by day where the view is obscured, two torpedoes must be placed on the rail two rail-lengths apart, one-fourth mile in advance of the rear part of train, to warn enginemen, and by night a white light must be placed on the front of the rear part of the train. When circumstances require, a flagman must protect engine when returning."

RULE 103-A.

San Diego: Movements across Fifth Ave. and on Richfield Oil Co. spur across Harbor Drive (Colton Ave.) must be protected by a flagman.

National City: Movements on Navy spurs across Eighth St. and Harbor Drive (foot of 13th St.) must be protected by a flagman account crossing signals not connected to these tracks.

Chula Vista: Trains and engines must not enter intersection at G. H. J. and K Streets unless traffic signal displays green aspect.

Movements across crossing at Fourth Ave. and at sidewalk on Third Ave. (near Park Way), must stop at crossing and be preceded by a flagman over crossing.

Fort Emory: Movements on spur across State Highway must be protected by a flagman.

Coronado: Boulevard stops at Fourth St., Pomona Ave. and Orange Ave. do not apply to trains.

La Mesa: Movements across La Mesa Blvd. must stop at crossing and be preceded by a flagman over crossing.

RULE 104. The normal position of junction switches at Twelfth St., National City and Chula Vista Jct. is for the San Diego-El Centro main track.

RULE 105. Capacity of Sidings column indicates the number of cars of average length of 49 feet that siding will hold between fouling points, in addition to one engine and caboose.

Track 1 in classification yard is siding for San Diego.

First crossover switch west of San Ysidro station is initial switch for westward trains; and west switch at west end of yard is initial switch for eastward trains.

East switch of siding Tijuana is initial switch for westward trains; and west crossover switch is initial switch for eastward trains.

RULE 206. Second paragraph will not apply to SP engines.

RULE 221. Trains must obtain clearance before leaving:

San Diego.....Eastward trains.
San Ysidro, Tecate.....All trains.

AUTOMATIC BLOCK SIGNALS

RULE 505. When Signals 1022 and 1023 are in stop position, train shall stop and then proceed immediately with caution to Bridge 102.29, and await arrival of motor car patrolman following train, who will inspect bridge and authorize train to proceed if safe to do so.

RULE 535. Spring switches not equipped with facing point locks are located as follows, and speed indicated in Speed Restrictions table must not be exceeded while passing over them in facing movement, or in trailing through them:

Location	Normal Position
San Diego.....Enginehouse lead	.....Main track

Spring switches are also located on other track as follows:

Stem switch on wye at San Diego, one on enginehouse lead, and three on enginehouse tracks at San Diego.

AUTOMATIC INTERLOCKING

Naval Repair Base Crossing, MP 3.3

Limits extend from interlocking signal 450 feet west of crossing to interlocking signal 450 feet east of crossing. Derails on Navy track only. Normal position indicates proceed for SD&AERy.

Trains and engines must not exceed 20 MPH between interlocking signals.

If signal indicates "stop" observe Rule 663 and proceed. If signal indicates "stop" and not attended by trainman or operator on Navy track, and signal does not clear when train enters interlocking limits, make report from next train-order office.

RULE 760. CENTRALIZED TRAFFIC CONTROL

RULE 772(a). Is revised to read:

"Work limits and clock time limit must be obtained from the train dispatcher, and dual control switch machine must be placed in hand position and locked, whether switch is to be thrown or not, and it must not be again placed in motor position until switching or work has been completed. Signals governing movements within the limit specified by train dispatcher will then display stop indication, and signals may be passed without stopping. Protection by flagman will not be required in either direction within the work limit and time limit. All movements must be made with caution, and if work is not completed within the time limit specified, extension must be obtained from train dispatcher. If the track is cleared and selector lever restored to motor position and it is again desired to use the dual control switch or foul main track, new authorization must be obtained."

RULE 774. Is revised to read:

"After permission is obtained from the train dispatcher, switch must be placed in hand position in the following manner:

(a) Unlock switch lock.
(b) Move selector lever from position marked 'Motor' to position marked 'Hand'.
(c) Operate hand-throw lever back and forth until switch points are seen to move with movement of lever, then line switch for route to be used and check points to see that they fit properly.
(d) After movements over switch have been completed, switch must be restored to position in which originally found, then restore selector lever to position marked 'motor' and secure with lock. The selector and switch levers must not be forced. They will move easily when properly in mesh, although some manipulation of first one and then the other may be necessary to get them in proper mesh."

RULE 776(b). Is revised to read:

"If desired movement requires that position of switch be changed, or if light on control machine is not illuminated (which would indicate that dual control switch is not locked), train dispatcher must not authorize movement except by requiring that switch machine be placed in hand position before the movement, and that it be returned to motor position after movement over the switch is completed. Dual control switch must be hand thrown for movement if required. Member of crew must notify train dispatcher when selector lever has been returned to motor position. Movement must not exceed restricted speed to the next signal."

GENERAL REGULATIONS

RULE 821. Speed of equipment over inundated tracks must not exceed 3 MPH, and the depth of water above top of rail must not be more than the following:

Diesel engines..... 3 inches
Streamlined passenger cars..... 6 inches
Roller bearing steam engines..... 9 inches
Other passenger cars and steam engines.....12 inches

RULE 825. When necessary to cut crossing and a distance of 100 feet on each side cannot be provided, a flagman must protect. Cars must not be left in any position that would in any way intercept the view of an autoist or pedestrian of an approaching train unless crossing is protected as stated above.

When cars are left on grade not protected with derail they must be chained to the rail.

Cars must not be cut off train on grade, depending on hand brakes or air brakes to hold them, but must be placed with the engine.

RULE 827. On freight and mixed trains between KP 14 and KP 19 and between Redondo and Coyote Wells, a member of crew must observe track to rear of train for evidence of derailment or any other condition requiring immediate stopping of train.

RULE 833. Whenever practicable locomotive cranes, or cranes of similar type must be handled in trains with heavy end forward.

Cranes or machines with rotating body, loaded on open cars, must not be moved until inspected and released by mechanical department. Conductors must not move Jordan Spreaders, except when in use, unless wings are protected against spreading by chain or tie bar extending from wing to wing and wing arm to wing arm.

RULE 836. Cars moved from one station to another ahead of engine on descending grade must be chained to the engine. Switching movements on descending grade must be protected by a derail. When practicable, engine must be kept on lower end of cars.

RULE 872. Second paragraph is cancelled.

RULE 874. Steam engines running light on descending grade must stop at Campo and MP 118.00 a sufficient length of time for engineer to assure himself that tires and machinery are in a satisfactory condition.

RULE 878. Engine flues must be sanded eastward approaching Hipass, westward when approaching Culvert 106.71.

Engine flues must not be sanded while passing places where damage from fire might result.

RAILROAD RADIO RULES

RULE 950-C. Is revised to read:

"Employes required to operate railroad radio transmitting sets at fixed stations must be conversant with Railroad Radio General and Operating Rules and pass examination thereon."

AIR BRAKE RULES

RULE 3. Standard brake pipe pressure for freight and mixed trains operating through between San Diego and El Centro is 90 pounds.

RULE 13. Should all power units of a diesel engine running light or while handling train become inoperative on a grade, light engine or train, after stopping, must be immediately secured with hand brakes and engine wheels secured by blocking or chains.

If dynamic brake fails between Hipass and Coyote Wells stop must be made immediately, and after brake pipe pressure has been restored, train may proceed being governed by Rules 17 and 34. In the event tonnage per operative retainer exceeds 60 tons, speed will be reduced to insure safety but must not exceed 15 MPH.

RULE 17. All retainers will be turned up on eastward freight and mixed trains, Hipass to Jacumba and Culvert 106.71 to Coyote Wells, except that with one diesel unit with dynamic brake in operation and not exceeding 1550 tons between Hipass and Jacumba or 1400 tons between Culvert 106.71 and Coyote Wells, or with two diesel units with both dynamic brakes in operation and not exceeding 3000 tons between Hipass and Jacumba or 2500 tons between Culvert 106.71 and Coyote Wells, may operate without retainers unless retainers are requested by the engineer.

Trains powered by diesel engine with dynamic brakes in operation and tonnage in excess of above must have one retainer for each 125 tons turned up solid on head end.

RULE 25. Is revised to read:

"At any point, except as provided in Rule 32, after angle cock is closed and locomotive detached or train uncoupled, then recoupled and angle cock opened, rear end test must be made in the following manner:

(a) When visibility permits or other means of communication are available for transmission of signals between the lead locomotive and rear of train, the engineer must place brake valve handle in lap position while couplings are being made and angle cocks opened, after which he must note brake pipe pressure as indicated by gage, and if it has not been reduced at least 20 pounds he must reduce it to that amount and release brakes. While release is being made trainmen must observe caboose gage and must not authorize train to proceed until it is known that the pressure is restored to at least 60 pounds and the rear brakes have released.

(b) When visibility does not permit and other means of communication are not available for transmission of signals between the lead locomotive and rear of train, or at any point that the Superintendent may designate, the engineer must charge the brake system to not less than 10 pounds below standard pressure, make a reduction of 10 pounds, and as soon as the brake valve exhaust closes, signal by one sound of the locomotive whistle. The angle cock at the rear of train must then be opened gradually and with care to avoid emergency action, allowing only enough air to escape to cause the brake pipe gage hand on the locomotive to fall. When the engineer notes the brake pipe pressure falling, he must signal by two sounds of the locomotive whistle and the angle cock must then be closed. When the brake pipe pressure has stopped falling, the engineer must release the brakes.

(c) When coupling or detaching one or more locomotives ahead of road locomotive, or immediately ahead of, or at rear of caboose, or when caboose only is added or detached, the brakes must be applied with not less than a 20 pound reduction before the angle cock is opened or closed. After coupling and opening the angle cock, and while release is being made, trainmen must observe caboose gage and must not authorize train to proceed until it is known that the pressure is restored to at least 60 pounds and rear brakes have released.

Rear end test will be made by all freight and mixed trains at Hipass and by eastward freight and mixed trains at Culvert 106.71, except that diesel powered trains with dynamic brake in operation not stopping will make running test at these points. Trainmen will note air gage on rear end while reduction is being made and will not give proceed signal unless brake pipe pressure is being restored following the application. If proceed signal is not received, stop must be made immediately and cause ascertained.

Air must be cut in on all cars west of engine when handling cars on Commercial Street east of 16th Street, San Diego.

RULE 32. Last sentence of third paragraph is revised to read:

"Trainmen must observe caboose gage and must not authorize train to proceed until it is known that the pressure is restored to at least 60 pounds and the rear brakes have released."

RULE 33. The gross tonnage of freight and mixed trains must not exceed the following number of tons per operative brake between the stations named:

Hipass and Coyote Wells, except.....60 tons
with diesel engine and with dynamic brakes in operation.....75 tons

RULE 34. When necessary to use retainers as prescribed by Rule 17, stop must be made at MP 118.00 as prescribed by Air Brake Rules and Regulations, except that when train is powered by diesel engine with all dynamic brakes in operation, this stop may be eliminated if in the judgment of the conductor and engineer , wheels are not overheating and it is safe to do so.

RULE 39. Running test must be made by passenger trains at Hipass.

MISCELLANEOUS

Steam engines heavier than C class (200,000 pounds on drivers) are not permitted to operate on SD&AERy.

When pushing trains out of yards engine will not be placed behind wooden underframe equipment.

Engines weighing over 145,000 pounds on drivers are not permitted to operate on Chula Vista, Coronado and La Mesa branches.

Avoid taking water at emergency water stations at Redondo and Dos Cabezas. If necessary to take water, take only enough to reach next unrestricted water station.

Eastward trains and light engines have sufficient water in tank at Jacumba to make Calexico.

Eastward helpers making turn at Coyote Wells take full tank of water at Jacumba.

Load limit (car and contents):

San Diego-El Centro.....210,000 pounds
National City-Chula Vista.....169,000 pounds
San Diego-North Island.....169,000 pounds
San Diego-El Cajon.....169,000 pounds

Unless authorized by Superintendent, heavier loads must not be handled.

Employes of the SD&AERy., while performing service on tracks of the SP at or between El Centro and Calexico, are under jurisdiction of the officers and will be governed by Rules and Regulations of the Transportation Department, timetable and bulletins of the SP.

When steam engine is coupled next behind diesel engine on the head end of either a freight or passenger train, dynamic brakes must not be used.

When a diesel locomotive is derailed attempt to rerail it must not be made unless an officer or supervisor of the Mechanical Department (or in their absence other qualified officer) is present.

Should a passenger train, irrespective of the type of power being used, be stopped in a tunnel, air conditioned cars within the tunnel must immediately have the air conditioning systems, including ice engines and engine generators, shut off, fresh air intake shutters closed, and blower fans shut off.

Should a diesel-powered train be stopped with the engine in a tunnel and it is found that, in the case of a passenger train it cannot be moved within five minutes after stopping, and in case of a freight train it cannot be moved within a reasonable length of time, trainmen and enginemen must take necessary precautions to prevent movement. Independent brake and sufficient hand brakes must be immediately applied. Engine wheels must be secured by blocks and chains, and power plants and steam generators, if any, on diesel engine shut down.

INTERNATIONAL BOUNDARY

Trains approaching gate at International Boundary, San Ysidro, will sound one long blast of whistle to inform Government Officials of their presence. If prompt response is not gained after whistle blast, an employe will go at once to Government Headquarters and request service.

Trains will stop before crossing the International Boundary line at San Ysidro. Trains in both directions when not accompanied by Customs Immigration Rider will stop at Campo. Trains in both directions will stop at Tecate. Trains must not cross International Boundary line without first notifying Customs and Immigration Officers and obtaining necessary permission from them.

Westward trains coming into Tijuana, when not accompanied by rider, will proceed without stopping to Boundary line for inspection by officers of the Mexican Government, after which cars for Tijuana may be set out and necessary switching performed. Mixed trains will also stop passenger equipment at depot when passengers are handled.

LOCATION OF OVERHEAD AND SIDE STRUCTURES NOT STANDARD CLEARANCE

San Diego: Citrus Soap Co. spur: Pipes on outside of building.
" Fire hydrant on Fourth Ave., at K St.
" Fire hydrant, power poles and street lights along east curb line of Fifth Ave.
" Sperry Flour Co. spur.
" All tracks at engine house, impaired overhead and side clearance.

Boal: Ice dock equipped with aprons which must be raised and secured before moving cars on adjoining track.

Otay: Timber ramp at Filtrol spot on spur will not clear man on side of car.

Tecate: Pipe and counter weights on Malt Plant track.
" Pilaster at NW corner of Malt building on Brewery spur will not clear man on side of car, and pipes over track 30 ft. from east end will not clear man on top of car. Overhead wires will not clear man on top of car.
" Brewery spur: Overhead pipes on east 30 ft., and wooden platform on east 100 ft.

Plaster City: Gypsum chutes along track 4 of U. S. Gypsum Co., when in loading position.

INSTRUCTIONS IN CASE OF FIRE

1. FIRE FIGHTING EQUIPMENT:

(a) Five gallon fire extinguishers are located at following points:

West end Tunnel 1	East end Tunnel 13
West end Tunnel 2	West end Tunnel 14
West end Tunnel 3	West end Tunnel 15
East end Tunnel 3	West end Tunnel 16
East end Tunnel 4	East end Tunnel 17
West end Tunnel 5	West end Tunnel 18
West end Bridge 97.39	West end Bridge 104.01
East end Tunnel 6	West end Bridge 104.17
Both ends Tunnel 8	West end Tunnel 19
West end Tunnel 10	West end Tunnel 20
West end Tunnel 11	West end Tunnel 21
West end Tunnel 12	

Note:—Fire extinguishers at tunnels are located just inside tunnel portals.

(b) Connections for portable phones in Carriso Gorge are located at following points:

Near West end Tunnel 5	Near both ends Tunnel 14
East end Tunnel 6	West end Tunnel 15
West end abandoned Tunnel 7	East end Tunnel 16
Both ends Tunnel 8	West end Tunnel 17
West end Tunnel 9	West end Tunnel 18
West end Tunnel 10	West end Tunnel 19
West end Tunnel 10	West end Tunnel 19
East end Tunnel 12	West end Tunnel 20
East end Tunnel 13	West end Tunnel 21

There are telephones at the east end of Tunnel 11 and at the east end of Bridge 102.29.

These connections are provided for emergency service only and anyone using them in at attempt to get help must, after his call has been placed, DISCONNECT HIS PORTABLE PHONE so that operator can call camps. Failure to disconnect phone will interfere with calling circuit.

(c) Tank car MW-1001:

Tank car MW-1001 with 10,000 gallons of water is kept first out at Tunnel 15 spur. A pump is mounted on deck over top of tank which may be operated by either steam or air; 300 feet of fire hose on a reel; and a tool box containing fire-fighting tools and fittings. Car is equipped with headlights on each end; and extension cord to be plugged into socket on engine is kept in tool box. Steam-air line to pump is fitted with hose connection at each end of car, so that pump may be operated from either end of engine or train, and by either steam or air. A length of steam hose and fittings are kept in tool box of tank car to make connections. When pump is run by air, automatic brake valve on engine should be held in Full Release position, and on diesel locomotives, engine speed increased to increase volume of air.

2. INSTRUCTIONS:

(a) Trains discovering a fire should immediately call operator so equipment can be dispatched to fire. If engine is equipped with fire fighting facilities, every effort should be made to extinguish the fire with the equipment on the engine. If it is evident that fire cannot be put out with equipment at hand and it is possible to reach tank car at Tunnel 15 spur, get that car and return to the fire. Tank car should be picked up so that it will be headed into the fire ahead of engine or train. Stake and pinch bar are included with tools on deck of tank car. Tunnels and bridges in some places are located so close together that a fire may spread to another structure. While it might not be possible to extinguish the fire in one structure, equipment should stand by to prevent fire from spreading.

Employes will use their best judgment in meeting an emergency and act in the safest and quickest way to meet the conditions.

(b) Tank car MW-1001 must always be left, filled and first out at Tunnel 15 spur.

SPEED TABLE

Speed per Hour	1 Mile in Min. Sec.	1 Kilometer in Min. Sec.	Speed per Hour	1 Mile in Min. Sec.	1 Kilometer in Min. Sec.	Speed per Hour	1 Mile in Min. Sec.	1 Kilometer in Min. Sec.	Speed per Hour	1 Mile in Min. Sec.	1 Kilometer in Min. Sec.
6	10.00	6.13	21	2.51	1.46	31	1.56	1.12	41	1.27	0.54
8	7.30	4.40	22	2.43	1.41	32	1.52	1.10	42	1.25	0.53
10	6.00	3.44	23	2.36	1.37	33	1.49	1.08	43	1.23	0.52
12	5.00	3.06	24	2.30	1.33	34	1.45	1.05	44	1.21	0.51
15	4.00	2.29	25	2.24	1.29	35	1.42	1.03	45	1.20	0.50
16	3.45	2.20	26	2.18	1.26	36	1.40	1.02	46	1.18	0.48
17	3.31	2.11	27	2.13	1.23	37	1.37	1.00	47	1.16	0.47
18	3.20	2.04	28	2.08	1.20	38	1.34	0.58	48	1.15	0.46
19	3.09	1.57	29	2.04	1.17	39	1.33	0.57	49	1.13	0.45
20	3.00	1.52	30	2.00	1.15	40	1.30	0.56	50	1.12	0.44

HOSPITAL DEPARTMENT SURGEONS

LOCATION	NAME	TITLE
San Francisco	Dr. W. W. Washburn	Chief Surgeon
San Diego	Dr. T. F. O'Connell	District Physician and Surgeon
San Diego	Dr. Jerome F. Smith	District Physician and Surgeon
San Diego	Dr. W. H. Geistweit, Jr.	Oculist and Aurist
San Diego	Dr. G. P. Lauren	Oculist
San Diego	Dr. John C. Holman	Dermatologist
National City	Dr. T. N. Lococo	District Physician and Surgeon
Tijuana	Dr. A. M. Reyes	District Physician and Surgeon
Tecate	Dr. Manuel V. Aguilar	District Physician and Surgeon
El Centro	Dr. F. W. Peterson	District Physician and Surgeon
El Centro	Dr. B. E. Schoensee	District Physician and Surgeon
El Centro	Dr. Richard Maddux	District Physician and Surgeon
Calexico	Dr. M. P. Ajalat	District Physician and Surgeon
Mexicali	Dr. Mario Flores	District Physician and Surgeon
Mexicali	Dr. Gaston H. Salazar	District Physician and Surgeon

HOSPITALS

GENERAL HOSPITAL.....SAN FRANCISCO, CALIF.
MERCY HOSPITAL .....HILLCREST DRIVE, SAN DIEGO, CALIF.

SPECIAL INSTRUCTIONS

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains, in miles per hour, as shown below must not be exceeded, and must be further reduced as prescribed by speed signs or by timetable bulletin.

All trains must run carefully during and after heavy storms, particularly when the track is apt to be affected. When fog, storms or other conditions obscure track or signals, speed of trains must be so reduced as to permit strict observance of signals and INSURE SAFETY, REGARDLESS OF TIME.

TERRITORY	PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES	
			RUNNING FORWARD	RUNNING BACKWARD
MP MP Column:	1	2	3	*4
EASTWARD, SAN DIEGO TO EL CENTRO:				
1.10 to 2.84 (28th Street)	20	20	20	15
2.84 to 2.85 (road crossing)	10	10	10	10
2.85 to 5.00	20	20	20	15
5.00 to 7.35 (Chula Vista Jct.)	30	30	30	30
7.35 to 7.36 (railroad crossing)	15	15	15	15
7.36 to 9.11 (Moss Street)	30	30	30	30
9.11 to 9.12 (road crossing)	10	10	10	10
9.12 to 15.00	30	30	30	30
15.00 to 15.57 (KP 0.00)	15	15	15	15
KP KP				
0.00 to 16.00	30	30	30	30
16.00 to 17.31	20	20	20	15
17.31 to 17.97	15	15	15	15
17.97 to 33.90 (Redondo)	30	30	30	30
33.90 to 40.69	25	25	25	20
40.69 to 41.70	20	20	20	15
41.70 to 66.59	25	25	25	20
66.59 to 67.64	20	20	20	15
67.64 to 71.41 (MP 59.94)	25	25	25	20
MP MP				
59.94 to 60.36	25	25	25	20
60.36 to 61.28	20	20	20	15
61.28 to 63.44	25	25	25	20
63.44 to 63.91	20	20	20	15
63.91 to 64.53	25	25	25	20
64.53 to 65.58	20	20	20	15
65.58 to 70.41	25	25	25	20
70.41 to 70.75	20	20	20	15
70.75 to 73.75	25	25	25	20
73.75 to 73.95	20	20	20	15
73.95 to 76.09	25	25	25	20
76.09 to 76.34	20	20	20	15
76.34 to 76.65	25	25	25	20
76.65 to 76.77	20	20	20	15
76.77 to 81.79	25	25	25	20
81.79 to 82.07	20	20	20	15
82.07 to 84.50 (Hipass)	25	25	25	20
84.50 to 92.90 (Jacumba)	20	20	20	15
92.90 to 96.61 (Tunnel No. 5)	25	25	25	20
96.61 to 98.67	15	15	15	10
98.67 to 99.10	10	10	10	10
99.10 to 106.56	15	15	15	10
106.56 to 122.50 (Coyote Wells)	20	20	20	15
122.50 to 147.53 (wye switch)	30	30	30	30
147.53 to 147.84 (junction switch)	10	10	10	10
EASTWARD, TWELFTH ST. NATIONAL CITY TO K ST., CHULA VISTA, except	..	10	10	10
6.02 to 7.40 (F St. jct.)	..	15	15	15
EASTWARD, F STREET JCT. TO NORTH ISLAND, except	..	15	15	15
19.43 to 21.31	..	12	12	12
EASTWARD, SAN DIEGO TO EL CAJON, except	..	15	15	15
over 13th and 16th St. crossings	..	10	10	10
over 28th, 30th and 32nd St. crossings	..	5	5	5
4.60 to 7.30	..	10	10	10
11.90 to 12.50	..	10	10	10
16.60 to 17.22	..	10	10	10

TERRITORY	PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES	
			RUNNING FORWARD	RUNNING BACKWARD
MP MP Column:	1	2	3	*4
WESTWARD, EL CENTRO TO SAN DIEGO:				
147.84 to 147.53 (wye switch)	10	10	10	10
147.53 to 122.50 (Coyote Wells)	30	30	30	30
122.50 to 106.56	20	20	20	15
106.56 to 99.10 (Tunnel No. 8)	15	15	15	10
99.10 to 98.67	10	10	10	10
98.67 to 96.61 (Tunnel No. 5)	15	15	15	10
96.61 to 92.90 (Jacumba)	25	25	25	20
92.90 to 84.50 (Hipass)	20	20	20	15
84.50 to 82.07	25	25	25	20
82.07 to 81.79	20	20	20	15
81.79 to 76.77	25	25	25	20
76.77 to 76.65	20	20	20	15
76.65 to 76.34	25	25	25	20
76.34 to 76.09	20	20	20	15
76.09 to 73.95	25	25	25	20
73.95 to 73.75	20	20	20	15
73.75 to 70.75	25	25	25	20
70.75 to 70.41	20	20	20	15
70.41 to 65.58	25	25	25	20
65.58 to 64.53	20	20	20	15
64.53 to 63.91	25	25	25	20
63.91 to 63.44	20	20	20	15
63.44 to 61.28	25	25	25	20
61.28 to 60.36	20	20	20	15
60.36 to 59.94 (KP 71.41)	25	25	25	20
KP KP				
71.41 to 67.64	25	25	25	20
67.64 to 66.59	20	20	20	15
66.59 to 41.70	25	25	25	20
41.70 to 40.69	20	20	20	15
40.69 to 33.90 (Redondo)	25	25	25	20
33.90 to 17.97	30	30	30	30
17.97 to 17.31	15	15	15	15
17.31 to 16.00	20	20	20	15
16.00 to 0.00 (MP 15.57)	30	30	30	30
MP MP				
15.57 to 15.00	15	15	15	15
15.00 to 7.36 (railroad crossing)	30	30	30	30
7.36 to 7.35 (Chula Vista Jct.)	15	15	15	15
7.35 to 5.00	30	30	30	30
5.00 to 1.10	20	20	20	15
WESTWARD, K ST., CHULA VISTA TO TWELFTH ST., NATIONAL CITY, except	..	10	10	10
7.40 to 6.02	..	15	15	15
WESTWARD, NORTH ISLAND TO F ST. JCT., except	..	15	15	15
21.31 to 19.43	..	12	12	12
WESTWARD, EL CAJON TO SAN DIEGO, except	..	15	15	15
17.22 to 16.60	..	10	10	10
12.50 to 11.90	..	10	10	10
7.30 to 4.60	..	10	10	10
over 32nd, 30th and 28th St. crossings	..	5	5	5
over 16th and 13th St. crossings	..	10	10	10

*Diesel engines running light in either direction will use Column 3.

SPEED RESTRICTIONS FOR OTHER THAN MAIN TRACKS	With Caution Not Exceeding MPH
Through sidings, yard and other tracks, wyes, balloon tracks, crossovers and turnouts, except:	10
With DF-101 to 108, 112, 115 and 119 class engines	6

SPEED RESTRICTIONS FOR ENGINES: Maximum speed shown below is subject to further restrictions applicable to certain territories as shown in Speed Restrictions for Trains:

NOMINAL CLASS	RUNNING FORWARD		RUNNING BACKWARD WITH TRAIN OR LIGHT
	WITH TRAIN	LIGHT	
C	25	25	25
DF-101 to 108, 112, 115 and 119	30	30	30
DF-200 and 204	30	30	30
DS-100, 111 and 113, 115	25	25	25
DS-200	25	25	25
T	25	25	25
Any engine not listed	25	25	25

DS-100, 111 and 113, 115 class engines restricted to main track between San Diego and El Centro, but may enter sidings just to clear if necessary. Must not be taken on wyes.

BETWEEN COYOTE WELLS AND EL CENTRO: Consolidation engines with 12,000 gallon tenders must not exceed 20 MPH.

Steam engines running backward, and DF-1 to 12 and DP class engines operated with engineer in other than the lead unit in direction of movement, must not exceed 20 MPH when approaching highway or street crossings at grade, subject to further restrictions imposed by local conditions.

Steam engines coupled tender to tender must not exceed speed permitted same engines running light backward.

Maximum speed of engines under following conditions, running under own steam, or hauled in train:

When all weight has been removed from any one pair of drivers	20 MPH
When all weight has been removed from only one wheel of any pair of drivers	20 MPH
When engine truck is removed	20 MPH
When main rod only is removed	20 MPH
When side rod only is removed	20 MPH
When both main and side rods are removed	20 MPH

Dead or disabled engines, and equipment which requires movement at reduced speed must first be reported as ready to move to the chief train dispatcher, who will designate the train in which the engine or equipment is to be moved. Such engine or equipment must not be handled in train until train-order designating maximum speed is issued.

Maximum speed of trains handling dead engines of S or SE class 20 MPH; other steam engines 25 MPH; and diesel engines the speed shown for same engine running forward light, except DS-200, 201 class must have traction motor brushes removed and speed restricted to 30 MPH.

Movement of foreign line engines, in service or dead in train, must not be authorized until provisions of current Line Clearance Circular have been complied with.

When train-order is received indicating that main track is out of service and that trains are to be detoured through a siding or other track, or over a shoofly, necessitating a reduction in normal train speed, signal 16(f) must be sounded on passenger trains one mile before reaching point where train must reduce speed, which must be acknowledged by whistle signal 14(g).

Maximum speed of trains handling locomotive crane, 20 MPH.

Freight cars must not be handled behind occupied passenger carrying cars, except in mixed trains in military or naval movements.

WATCH INSPECTORS

C. D. Fabrin, Manager of Time Service.....San Francisco
San Diego.....R. C. Wilson, 523 B St.
El Centro.....J. L. Bledsoe

RATING OF ENGINES—In Units of 2000 pounds (Tons)

NOMINAL CLASS	ENGINE NUMBERS	Garcia to Redondo .9% Grade	Redondo to Hipass 1.4% Grade	Plaster City to Coyote Wells .9% Grade	Coyote Wells to Hipass 2.2% Grade	.4% Grade	Level Track
DF-101 to 108	5203 to 5249	2800	1900	2800	1200	4450	5000
DF-112	5253 to 5278	2800	1900	2800	1200	4450	5000
DF-115	5294 to 5307	3350	2275	3350	1475	6175	7000
DF-119	5336 to 5339	3350	2275	3350	1475	6175	7000
DF-200 to 204	5101 to 5118	925	625	925	395	1725	3000
DS-110	1442 to 1463	1400	950	1400	600	2675	4000
DS-200, 201	1900 to 1903	530	355	530	225	1000	2000
T-28	2312 to 2362	1450	850	1450	525	2725	7625
T-32	2365 to 2384	1450	850	1450	525	2725	7625

LINES OF THE
SAN DIEGO & ARIZONA EASTERN RY.
IN CALIFORNIA
TIJUANA & TECATE RY.
IN MEXICO

SCALE OF MILES

0 5 10 15 20 25